Small Business Innovation Research/Small Business Tech Transfer

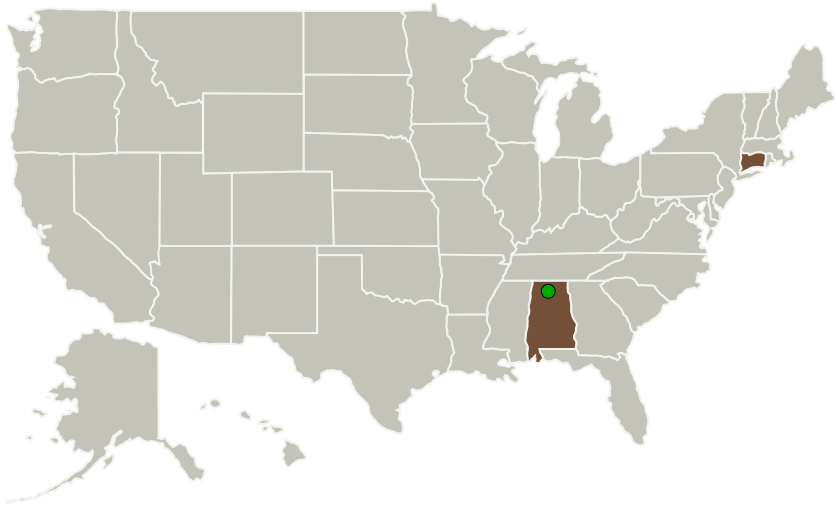
Software Tools for Fault Management Technologies, Phase II

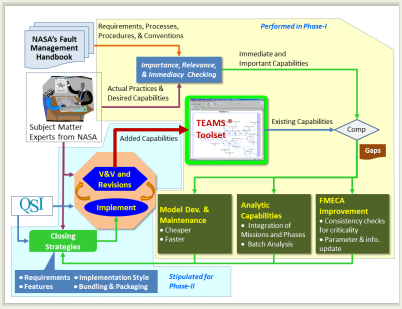
Completed Technology Project (2013 - 2015)

Project Introduction

Fault Management (FM) is a key requirement for safety, efficient onboard and ground operations, maintenance, and repair. QSI's TEAMS Software suite is a leading facilitator diagnostic and FM modeling, and performing various FM-related functions. Through this effort, QSI proposes to introduce capabilities to TEAMS that would significantly Reduce diagnostic model development cost and time, Enhance analytic capabilities for aiding model evaluation, and, Improve FMECA Process. These issues are of critical importance in developing and maintaining diagnostic models in a cost and time efficient manner and utilizing those for analyses related to diagnostic designs, models and overall scheme evaluation. The capabilities and features targeted in this effort are of high importance to develop and mature diagnostic schemes for systems in design phase as well as fielded systems. High-value assets such as NASA's space vehicles; Department of Defense's vehicles (Military aircraft, ships, and ground vehicles) whose underlying systems are designed with the philosophy to serve multiple types of mission involving different phases (or regimes) of operation. From that perspective, the outcome capabilities of this effort could also aid in developing diagnostic models and schemes for large and complex industrial installations.

Primary U.S. Work Locations and Key Partners





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Organizations Performing Work	Role	Type	Location
Qualtech Systems, Inc.	Lead Organization	Industry Minority-Owned Business, Small Disadvantaged Business (SDB)	Rocky Hill, Connecticut
Marshall Space Flight Center(MSFC)	Supporting Organization	NASA Center	Huntsville, Alabama

Primary U.S. Work Locations	
Alabama	Connecticut

Project Transitions

July 2013: Project Start

July 2015: Closed out

Closeout Summary: Software Tools for Fault Management Technologies, Phase II Project Image

Closeout Documentation:

- Final Summary Chart Image*(https://techport.nasa.gov/file/137333)*

Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Organization:

Qualtech Systems, Inc.

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

Project Management

Program Director:

Jason L Kessler

Program Manager:

Carlos Torrez

Principal Investigator:

Sudipto Ghoshal

Co-Investigator:

Sudipto Ghoshal

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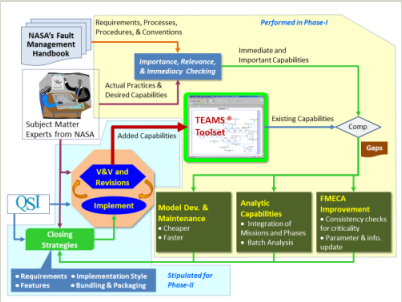
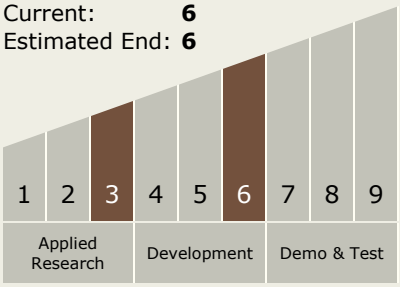
Images



Briefing Chart Image
Software Tools for Fault Management Technologies, Phase II
(https://techport.nasa.gov/image/136548)

Technology Maturity (TRL)

Start: **3**
Current: **6**
Estimated End: **6**



Technology Areas

Primary:

- TX11 Software, Modeling, Simulation, and Information Processing
  - TX11.2 Modeling
    - TX11.2.1 Software Modeling and Model Checking

Target Destinations

Earth, The Moon, Others Inside the Solar System, Outside the Solar System, The Sun, Mars